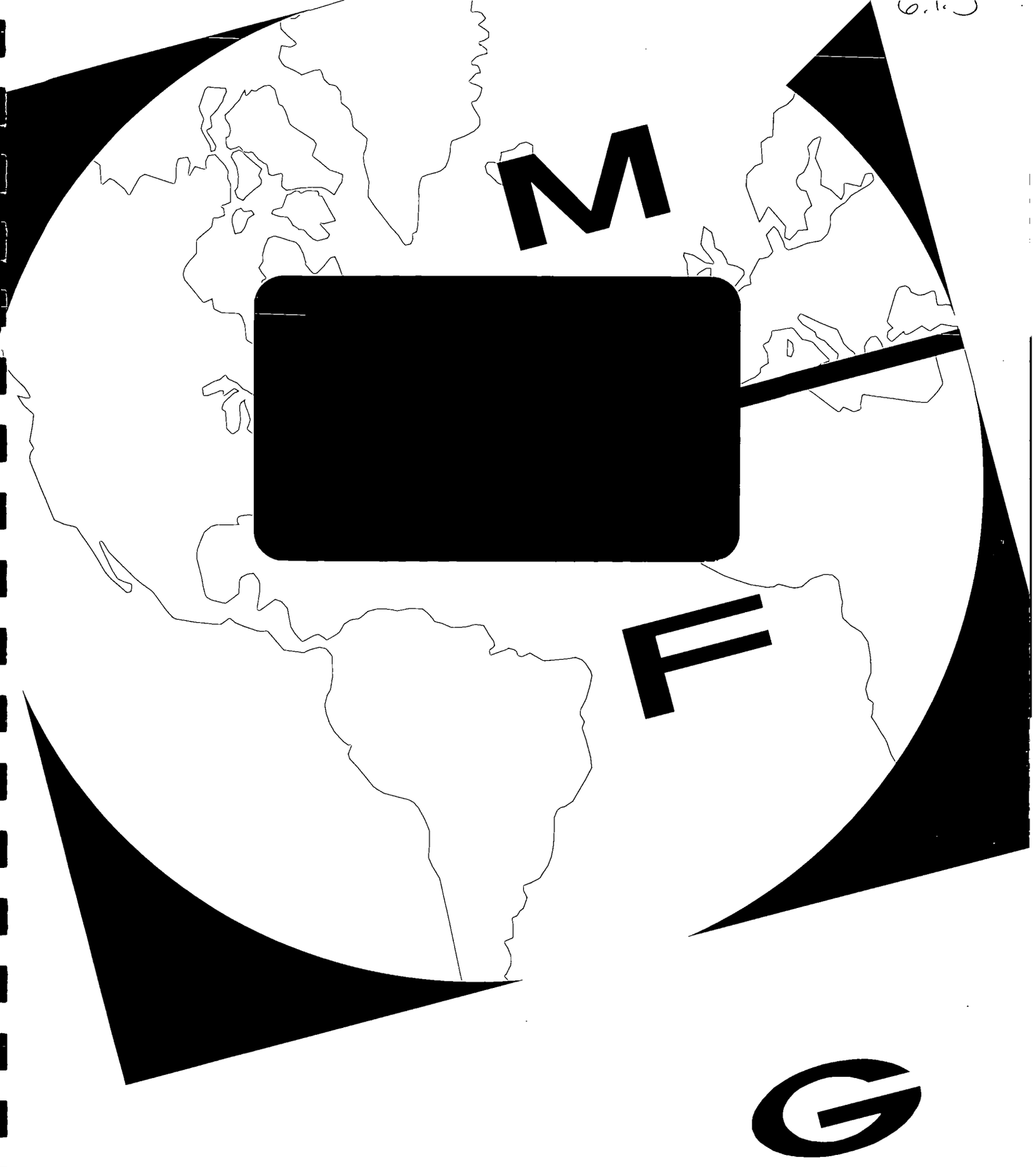

MFG, Inc.
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USEPA SF
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PRE-FINAL REMEDIAL DESIGN REPORT
AND
DRAFT REMEDIAL ACTION WORK PLAN

DEWATERING PIT SOLIDS REMOVAL

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS SUPERFUND SITE

August 1, 2002

Prepared for:

J. R. SIMPLOT COMPANY

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C.O. performance standards?
fail (UP)?

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MFG Project No. 010121-4

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1.0 INTRODUCTION

This document presents J.R. Simplot Company's Pre-Final Remedial Design Report (RDR) and Draft Remedial Action Work Plan (RAWP) for the removal and disposal of residual solids from the Dewatering Pit in the Simplot Plant Area of the Eastern Michaud Flats (EMF) Superfund Site located near Pocatello, Idaho. This action is part of the comprehensive Site remedy as described in the Record of Decision (ROD; USEPA, 1998) and subsequent Consent Decree for the Simplot Plant Area (USEPA, 2002).

This RDR/RAWP describes the actions required to implement the Dewatering Pit component of the final remedy. As described in the Statement of Work for the Simplot Plant Area (Appendix B to the Consent Decree), the Dewatering Pit element of work includes the excavation of residual solids from the Dewatering Pit and relocation of the excavated material to the gypsum stack..

The tasks that comprise the relatively straightforward design portion of this remedial component are addressed herein in Sections 2 and 3 and include the presentation of existing conditions, a discussion of the required work activities, and procedures for confirming that the performance standard for this element of work have been achieved. A set of construction drawings, graphically depicting the requirements of this work is provided as Appendix A. Because of the limited nature of the work, detailed technical specifications are not necessary to guide the completion of this element, however a statement of work has been prepared and is included as Appendix B. This Statement of Work will be used in conjunction with the drawings and other contract documents to solicit bids from contractors and to guide the implementation of the remedial action.

The remedial action (RA) planning portion of this document is presented in Section 4, which provides a detailed plan of action for completing the remedial activities. This RA Work Plan portion of the document addresses construction sequencing and scheduling, construction management for Dewatering Pit remediation and reporting requirements during construction. The required elements of a Construction Quality Assurance Plan for the Dewatering Pit element of work are addressed in Section 3.2. A Construction Health and Safety Plan, required by the Consent Decree Statement of Work, will be submitted under separate cover.

1.1 Site Description And Project History

The EMF Site is located near the City of Pocatello, Idaho and includes two industrial facilities (Drawing 0121C-101; Appendix A): the FMC Elemental Phosphorus Facility (ceased operations in December 2001) and the J.R. Simplot Don Plant. FMC produced elemental phosphorus. The Don Plant produces phosphoric acid and a variety of liquid and solid fertilizers. The EPA has divided the Site into three areas: The FMC Plant Area includes the FMC facility and adjacent land owned by FMC; The Simplot Plant Area includes the Don Plant and adjacent land owned by Simplot; and The Off-Plant Area which surrounds the FMC- and Simplot-Plant Areas.

The Simplot Don Plant covers approximately 745 acres and adjoins the eastern property boundary of the FMC facility. The main portion of the plant lies approximately 500 feet southwest of the Portneuf River. Of the 745 acres, approximately 400 acres are committed to the gypsum stack. Another 185 acres are occupied by the plant and its infrastructure. A significant portion of the remaining acreage to the south and southeast of the plant consists of cliffs and rugged steep terrain. A Union Pacific Railroad right-of-way is adjacent to the northern fence line of the Don Plant and passes through the northern portion of the Simplot Subarea, paralleling U.S. Highway 30. Access to the Don Plant is provided by I-86 and U.S. Highway 30.

The Don Plant began production of a single superphosphate fertilizer in 1944. Phosphoric acid production began in 1954. Currently, the plant produces 12 principal products, including five grades of solid fertilizers and four grades of liquid fertilizers. The principal raw materials for the process are phosphate ore, which is transported to the facility via a slurry pipeline from the Smoky Canyon mine, sulfur, and ammonia. The primary byproduct from the Don Plant process is gypsum (calcium sulfate) which is stacked on site.

An Administrative Order on Consent (AOC) was issued by the U.S. Environmental Protection Agency (EPA) on May 30, 1991 and entered into voluntarily by FMC and Simplot. The AOC specified requirements for implementation of a Remedial Investigation (RI) and Feasibility Study (FS) to evaluate site conditions and remedial alternatives to address any potential threats to human health and the environment. Based on the findings of these studies, EPA issued a Record of Decision (ROD; USEPA, 1998), specifying the selected remedial actions for the Site on June 8, 1998. A Consent Decree (USEPA,

2002) between EPA and Simplot, which specified the conditions for implementing the selected remedial actions in the Simplot Plant Area was entered on May 9, 2002.

1.2 Remedial Action Objectives And Performance Standard For Dewatering Pit Solids Removal

As set out in the Consent Decree Statement of Work, the objective of this action is to prevent incidental worker exposure to the solids in the Dewatering Pit by removing residual solids from the pit area.

The performance standard for this element of work will be removal of residual Dewatering Pit solids as verified through confirmatory soil sampling.

2.0 DEWATERING PIT CHARACTERISTICS

2.1 Physical Characteristics

The Dewatering Pit is located north of the Don Plant, between Highway 30 and Interstate 86, as shown on Drawings 0121C-102 and 103 (Appendix A). The Dewatering Pit was constructed and used briefly by Simplot to contain excess phosphate ore and pond solids from the period of start up for the ore slurry pipeline around 1991. The Dewatering Pit consists of three bermed areas. The surface area of the bottom of the eastern pit measures approximately 23,150 square feet. The surface area of the western pit is approximately 15,100 square feet, and the surface area of the small southern pit is 3,500 square feet. The berms are approximately eight feet high except on the side of Interstate 86, where the berms vary in height from eight to twelve feet. The berms are reportedly constructed of native soil and gravel that was excavated from the interior of the pits during construction. The solids within these pits consists primarily of phosphate ore residuals and solids precipitated by pH adjustment of irrigation waters, which can be visually recognized by their gray color in contrast to the light brown-colored native soil.

2.2 Chemical Characteristics

The RI found that the residual solids could be distinguished from soils based on the concentrations of various inorganic constituents, principally fluoride, phosphorus, cadmium, chromium, vanadium and zinc (Bechtel, 1996). During the RI, a single soil boring (S008B) was drilled within the eastern pit. The material encountered in the upper 2.5 feet of this boring consisted of residual solids. The material encountered in the remainder of the boring consisted of sand (2.5 to 4 feet bgs), and gravel (4 to 27 feet bgs). Soil samples were collected at the surface and from depths of 2.5, 10, 20 and 26 feet bgs.

The concentrations of indicator constituents measured in the soil samples are summarized in Table 1.

Check RT - there are soils beyond material

Table 1

Concentrations of Indicator Constituents in Dewatering Pit Solids and Underlying Soils

Constituent	Background Levels (mg/kg) [1]	Sampling Depth (feet)				
		Surface	2.5	10	20	26
		Concentration (mg/kg)				
Arsenic	7.7	15	<3.3	<2.8	<2.3	<0.55
Beryllium	1.0	5.2	0.23	0.19	0.13	0.12
Cadmium	1.9	131	0.54	0.49	0.5	0.49
Chromium	27.5	2,710	16.3	30.9	31.1	8.9
Fluoride	600	30,000	710	550	320	140
Phosphorus	672	51,300	544	501	301	407
Zinc	52.8	3,610	35.8	37.2	24.8	25.3

RBC industrial

Note:

1. Background constituent levels for site soils derived by EPA.

leaching to GW?

An examination of the results of the chemical analysis indicates that the sample of residual solids collected at the surface contained concentrations of a number of constituents above background soil levels. In the sample collected at a depth of 2.5 feet (just below the residual solids/soil interface), all constituents were at or below background concentrations, with the exception of fluoride (710 mg/kg).

Human health risks for site workers associated with incidental ingestion of soils were estimated in EPA's risk assessment (Ecology and Environment, 1996). For the Simplot Plant Area, risks were estimated for current workers (maintenance workers and gypsum stack workers) and for workers in a hypothetical future commercial/industrial scenario assuming the site is redeveloped after Simplot ceases operations and sells the land. The constituents driving risks were identified as arsenic and beryllium; these constituents also drive risks for the Dewatering Pit residuals. Constituents of concern at the site are present at background levels that often represent risks that are within or above the acceptable risk range

of 10^{-6} to 10^{-4}. Therefore, the risk assessment calculated incremental risks; risks associated with elevated constituent concentrations minus risks associated with background concentrations. Using the approach used in the risk assessment and the concentrations shown in Table 1 results in estimated cancer risks due to incidental ingestion of Dewatering Pit residual solids as follows:

- Simplot Maintenance Workers: for arsenic an incremental cancer risk of 1.3×10^{-6} (total cancer risk of 2.7×10^{-6} minus a background cancer risk of 1.4×10^{-6}), and for beryllium an incremental cancer risk of 1.9×10^{-6} (total cancer risk of 2.3×10^{-6} minus background of 0.4×10^{-6}). It should be noted that the risk assessment approach assumed that an individual worker performs activities in the Dewatering Pit area for 75 days per year for a period of 25 years. This area is not within the main plant area and in fact no work has been performed in or around the Dewatering Pit. The risk estimates are therefore highly conservative.

- Hypothetical Future Workers: for arsenic an incremental cancer risk of 2.2×10^{-6} (total cancer risk of 4.6×10^{-6} minus a background cancer risk of 2.4×10^{-6}), and for beryllium an incremental cancer risk of 3.2×10^{-6} (total cancer risk of 3.9×10^{-6} minus background of 0.7×10^{-6}). The risks were estimated based on the assumption that activities would be performed by an individual worker 50 days per year for 25 years.

As shown, estimated risks are within the acceptable risk range of 10^{-6} to 10^{-4}. EPA's guidance (OSWER Directive 9355.0-30, "Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions") states that EPA should clearly explain why remedial action is warranted if baseline risks are within the acceptable risk range of 10^{-6} to 10^{-4}. A risk manager may decide that a level of risk lower than 10^{-4} warrants remedial action where, for example, there are uncertainties in the risk assessment results. Simplot is not aware of any such explanation. In any event, it is worth noting that estimated health risks for the Dewatering Pit are low.

risk was calculated for material under solids?

To demonstrate compliance with the performance standard for this remedial action element, as discussed in Section 1.2, confirmation soil sampling will be performed following removal of the residual solids. For the purposes of confirming the removal of the residual solids, zinc has been selected as a suitable indicator parameter because the concentration of zinc in the residual solids was approximately 100 times the concentration measured in the underlying native soil. Although arsenic and beryllium are the risk drivers, the concentrations measured in the residual solids are low and similar to background and so neither of these constituents is a good choice for use in removal confirmation. Based on the data presented above in Table 1, it is anticipated that zinc concentrations in the underlying soil following removal will be at or below background levels, however, a confirmation value of 360 mg/Kg (approximately 10% of the concentration observed in the residual solids) has been selected to demonstrate complete removal. Confirmation soil sampling procedures are discussed in Section 3.2.

why not zinc background?

2.3 Estimated Volume Of Dewatering Pit Solids

The volume of the residual solids to be removed from the Dewatering Pits is estimated at approximately 6,800 cubic yards. This quantity estimate assumes a total surface area for the three pits of 41,750 square feet, an average excavation depth of 3.5 feet, and includes a 5% swell factor and 20% contingency.

3.0 REMEDIAL DESIGN

This section of the RDR/RAWP provides a general discussion of the required elements of the Dewatering Pit remedial action and a detailed description of the procedures for confirming that the performance standard is met. Construction drawings and a statement of work, which will be used to solicit bids from contractors and to guide the implementation of the remedial action are included in Appendices A and B, respectively.

3.1 Excavation And Transportation Of Dewatering Pit Solids

The location of the Dewatering Pit area with respect to the Don Plant is shown on Drawing 0121C-102. Drawing 0121C-103 presents a site plan of the Dewatering Pit area and indicates the approximate removal areas. Access to the Dewatering Pit area is provided via a gated gravel road off of Highway 30, which also provides access to the adjacent irrigation ponds. As discussed in Section 2.0, the Dewatering Pit residual solids targeted for removal are gray in color, visually distinct from the light-brown native soil. Excavation of the residual solids will be performed using standard earthmoving equipment. Material will be excavated and loaded directly into haul trucks for transport to the gypsum stack. The residual solids will be placed on the lower gypsum stack at the direction of Simplot operations personnel. As the gypsum stack grows due to ongoing Don Plant operations, the Dewatering Pit solids will be covered by gypsum.

Excavation of the residual solids will be guided by visual observation. Excavation will proceed both horizontally and laterally until there is a visible change in the material type indicating the interface with native soil. After reaching these excavation limits, confirmation sampling will be performed as described in Section 3.2.

3.2 Confirmation Soil Sampling

Following excavation of the Dewatering Pit residual solids based on visual observation, samples will be collected at the base of the excavation to confirm that the solids have been removed. As discussed

in Section 2.2, removal of the residual solids will be confirmed when the average zinc concentration in the 0 to 6 inch depth interval of the remaining underlying soil is less than 360 mg/Kg.

Sampling of underlying soils in the excavated areas will be performed to evaluate total zinc concentrations. Following the removal of the phosphate ore residual, as described in Section 3.1, composite samples of the underlying soil will be collected for total zinc analyses. Confirmation soil samples will be collected for laboratory analysis of total zinc by inductively coupled plasma emission spectrometry (ICP), EPA Method 6010. For the larger eastern and western pits the excavated area will be divided into four approximately equal sectors and composite samples will be collected from each sector. For the smaller southern pit only one composite sample will be collected. Each composite sample will comprise of four discrete subsamples collected at randomly selected locations within each sector. Each subsample shall consist of soil uniformly collected from the 0" to 6" depth interval. Subsamples will be collected using a decontaminated hand trowel and placed directly into a decontaminated stainless steel mixing bowl and homogenized by hand blending to a uniform consistency. A sample volume of at least 16 ounces of the homogenized composite sample will be placed in a precleaned glass or polyethylene container supplied by the laboratory, labeled and placed in a suitable sealed container for shipment to the laboratory. Sample identification and labeling, sample preparation and shipping, and sample documentation and tracking will be performed in accordance with MFG Standard Operating Procedure (SOP) No. 2, Sample Custody, Packaging, and Shipment, contained in Appendix C. Sampling equipment decontamination will be completed according to the procedures specified in MFG SOP No. 16, Equipment Decontamination, also contained in Appendix C.

If the average zinc concentration for an individual pit is above the confirmation level an additional six-inches of soil will be excavated in the sampling sector(s) exhibiting individual zinc concentrations over the confirmation value. The area will be resampled and a new average zinc concentration calculated for the pit. This process will be continued until the confirmation requirement is achieved or excavation has occurred to three feet below the visually identified residual solids. If excavation to three feet below the residual solids has not achieved the confirmation requirement then samples will be analyzed for arsenic and beryllium (the constituents of concern from a risk perspective) to document conditions at the base of the excavation before the area is regraded and covered by soil.

3.3 Regrading

Simplot is considering construction of a new lined pond in this area in the near future. To accommodate this construction the east dewatering pit may not be completely backfilled following removal. Once excavation activities have been completed, the gravel and soil berms surrounding the pits will be used as backfill and the area will be regraded to establish a final grade consistent with the surrounding terrain as indicated on Drawing 0121C-104, to promote positive drainage. There will be no compaction requirements for the backfill placed into the pits, however the material shall be placed in lifts no greater than twelve inches and nominally compacted by the placement equipment.

Because of the potential construction of a new lined pond in this area, vegetation establishment will not be performed as part of the remedial action. The regraded surface is anticipated to create a gentle swale, which will direct run-off to the east.

4.0 REMEDIAL ACTION PLAN

This section provides a detailed plan of action for completing the Dewatering Pit remedial action and fulfills the requirements of the Remedial Action Work Plan, as described in the Consent Decree Statement of Work for the Simplot Plant Area. As discussed in Section 3.0, construction drawings and specifications are included as Appendices A and B, respectively. The proposed construction schedule and necessary quality control and quality assurance activities are also addressed in this section.

4.1 Proposed Schedule And Schedule Considerations

Construction/removal activities are anticipated to begin within approximately 45 days of the approval of this RDR/RAWP document. It is estimated that the remedial action will take approximately 2 to 3 weeks to complete.

The Don Plant is an operating industrial facility. The Dewatering Pit is in a peripheral portion of the facility across U.S. Highway 30 from the main plant and adjacent to several holding ponds (see Drawing 0121C-102). Because the Don Plant is an operating industrial facility, excavation/grading activities and transportation of excavated materials to the gypsum stack will be planned and scheduled to minimize any impacts on facility operations. However, Dewatering pit remediation will be scheduled to avoid the annual facility turnaround period, when intensive maintenance activities occur which may result in access difficulties through the main Don Plant area. In addition, the effect of seasonal conditions on site access and soil excavation activities will be considered to avoid periods when the ground may be frozen or excessively wet conditions may make excavation and transportation activities difficult. Placement of material on the gypsum stack will be performed in a manner to avoid interference with stack building and maintenance operations.

when will confirmation sampling be conducted?

4.2 Mobilization And Site Preparation

Following approval of the RDR/RAWP by the EPA a contractor will be selected to perform the removal activities. After selection of a contractor and award of the contract, mobilization and site preparation will begin. Upon receipt of Simplot's notice to proceed, the contractor will mobilize

personnel, equipment and materials to the site. Prior to the initiation of excavation activities, utilities in and around the work area will be located. Care will be taken to identify possible underground and overhead hazards. Portable sanitation facilities will be provided for on-site personnel at the work area. Simplot maintains access control to the Dewatering Pit area by fencing and a secure gate. Additional site security for the remedial action is not anticipated.

4.3 Excavation And Loading Of Dewatering Pit Solids

Prior to the initiation of excavation activities, access to the pit solids will be gained by modifying the berm on the south side of each pit to create access ramps into each excavation area. The residual solids will be excavated from the designated areas and loaded into trucks for transport to the gypsum stack. To minimize the tracking of the residual solids, trucks will be routed and spotted for loading in locations around the perimeter of the pits to avoid driving across or through the material to be removed. The quantity of material removed from the Dewatering Pits will be established by tracking the number of trucks loaded and transported to the gypsum stack. This estimated quantity will be included in the construction completion report.

Trucks will be loaded with sufficient freeboard to prevent spilling of materials during transportation. Covering will not be required unless dust generation during transportation is identified as a problem even after the application of water. Materials that collect on end-gates, and sideboards during the truck loading process will be removed by brushing and sweeping. Collected soil will be loaded into the trucks for placement with the residues.

Suitable personal protective equipment (PPE) will be used to ensure worker safety during the Dewatering Pit removals. Specific details regarding the use of PPE and site safety procedures will be provided in the Construction Health and Safety Plan.

4.4 Transportation And Disposal Of Dewatering Pit Solids

Excavated material will be transported across Highway 30, onto the main Don Plant site, and to the southwestern corner of the lower gypsum stack, as shown on Drawing 0121C-102. During the transport phase of the work, the contractor will provide traffic controls and/or appropriate signage, as

necessary or required by state or local regulations, at the entrance onto Highway 30. The solids will be placed on the gypsum stack in an area compatible with the Simplot operations on the stack at the time of the work. All traffic associated with the Dewatering Pit removal will be subject to the Don Plant safety rules for vehicle movement at the facility.

As the Dewatering Pit solids are not classified as hazardous wastes and they are not being transported off-site, no special transportation or manifesting requirements will be necessary.

based on what?

4.5 Environmental Controls

Excavation activities will be conducted in a manner to minimize the potential for off-site contamination via water or wind erosion. Where necessary, stormwater run-on will be diverted away from the work area. Because the excavation activities will be performed within the depressed ponds of the Dewatering Pit area, stormwater run-off will be naturally controlled without the need for sediment control devices/structures.

Dust control activities will be performed with the goal of minimizing dust emissions from the work site. Perimeter and excavation area watering will be utilized, as necessary, to control off-site migration of contaminants via wind dispersion. Haul roads will be wetted as necessary to minimize dust emissions. Wetting will be performed in a manner so as not to saturate the soils. A gravel pad may also be constructed at the exit from the work area to Highway 30 to minimize tracking of materials onto the highway and to minimize dust.

4.6 Site Restoration

Site restoration activities will be implemented upon completion of excavation and confirmation sampling. These activities will include backfilling the pits using the berm material surrounding the pits and grading the area to match the surrounding existing grade and to promote positive drainage.

5.0 CONSTRUCTION MANAGEMENT PLAN

The remediation of the Dewatering Pit will be conducted generally as described in Section 4.0 of this report. This section presents an overview of the construction inspection and management procedures including a brief discussion of project roles and responsibilities.

5.1 Management Of Remedial Actions

The J.R. Simplot Company has overall responsibility for the completion of the Dewatering Pit remedial action. Mr. Ward Wolleson of Simplot is the project manager and will act as the Remedial Action Coordinator for this work. In this role, Mr. Wolleson will be responsible for representing the interests of Simplot and ensuring that the project objectives are met within the framework of the Consent Decree and Statement of Work. MFG, Inc., on behalf of Simplot, is responsible for the development of the Remedial Design and Remedial Action planning. Simplot's representative on-site during construction will be Mr. Dale Reavis, P.E. The on-site representative will be responsible for overall supervision of the remedial action construction. Simplot will designate a field supervisor to perform day to day management of the remdial action construction activities. The field supervisor will be responsible for overseeing and documenting the contractor's operations, for documenting and performing visual observation, and ensuring the performance of all necessary quality control and quality assurance activities. The U.S. Environmental Protection Agency (EPA) is the lead agency on the project and will be providing oversight of the RD/RA activities including document review and acceptance and oversight of field activities, as necessary. Ms. Linda Meyer is EPA's Remedial Project Manager and primary EPA contact.

The objective of the construction management activities is to ensure compliance with the approved project plans. The detailed plan for completing the RA activities, or RA Work Plan, is presented in Section 4.0 of this document. Although no significant changes are envisioned, material changes in the scope of work or procedures for the implementation of the work may be necessitated by currently unforeseen conditions. If this occurs, change management procedures will be initiated to facilitate the modification to the RA program and gain EPA approval. Proposed or necessitated changes will be presented in writing to the EPA for review and approval. This change request will identify: the problem or situation that the change arose from; describe in detail the recommended change or

modification suggested as a solution; and present an evaluation of the impact to the attainment of performance standards or schedule, if any. No deviations from the approved plans will proceed without approval of the EPA. Minor changes in the sequencing, site layout, or remediation procedures not in conflict with the intent of the project plans and specifications will be documented by the on-site representative and reported to the EPA's project manager, but will not require the initiation of formal change management procedures.

5.2 Quality Control And Quality Assurance

This section describes the general quality control and quality assurance procedures to be implemented by the construction management team to ensure compliance with the project performance requirements. Quality control refers to the procedures, methods and tests utilized by the construction contractor to achieve compliance with the plans and specifications, and quality assurance refers to the site inspection, checks and tests performed by the management team to ensure that the substantive requirements of the plans and specifications are met.

The primary quality control procedures to be utilized by the construction contractor include the use of adequately skilled personnel for the work being performed. Construction surveys will also be performed, as needed, to verify the depth of any additional excavation (beyond that guided by visual observation) and to ensure that the final regraded surface is in accordance with design requirements. The Contractor will also be required to cooperate with the on-site representative in collecting verification sampling and other quality assurance activities.

Quality Assurance procedures will primarily involve field inspections of the remediation project by the on-site representative. All procedures, materials, and equipment used in the construction will be observed and monitored by the on-site representative on a daily basis. Work elements that are not in compliance with the plans and specifications will be reworked by the contractor so that the element is in compliance. All quality control data supplied by the contractor will be documented by the on-site representative to allow complete project tracking of all components of the construction. Specific procedures and protocols for confirmation sampling are presented in Section 3.2 of this report.

5.3 Construction Reporting

The field supervisor responsible for overseeing the remedial action construction activities will keep a daily log, or complete a daily report, documenting the following information:

- Date;
- Weather conditions;
- Start and stop times;
- Names of people working and tasks performed by each;
- Number and approximate size of loads of material removed;
- Location of dumped loads on the gypsum stack; and
- Any other item the field supervisor feels is appropriate to include in the log.

In accordance with the requirements of the Consent Decree and Statement of Work, monthly progress reports will be submitted to the EPA to provide a status of activities being conducted within the Simplot Plant Area. A section of this report will be dedicated to reporting on the progress of Dewatering Pit activities, as appropriate.

Upon substantial completion of Dewatering Pit remedial activities, the EPA will be notified for the purpose of conducting a Prefinal Construction Inspection, which will consist of a walk-through inspection. If outstanding construction items are discovered during the inspection, a Prefinal Construction Inspection Report will be submitted, including details of outstanding construction items, actions performed to resolve the items, completion date and an anticipated date for the final inspection. The final construction inspection will evaluate items identified in the prefinal inspection. Within 30 days of the Final Construction Inspection, a Construction Completion Report will be submitted. This report will include descriptions of the remedial activities, field records and as-built drawings. This report will include a description of the project organization, the construction sequence, equipment and personnel used during remedial activities, a description of design changes/field changes/change orders, a summary of all QA/QC testing, surveying and final project quantities. The final as-built drawings and certification report will be signed and stamped by an Idaho-registered Professional Engineer.

5.4 Construction Health And Safety Control

A Construction Health and Safety Plan will be prepared and submitted to the EPA under separate cover. This plan will detail the minimum health and safety requirements to be adhered to during the performance of remedial action activities. The construction contractor will be responsible for the health and safety of their construction crews and personnel during on-site activities. The Simplot on-site representative will be responsible for providing guidance and inspection to ensure that proper procedures are followed for health and safety of the public and visitors to the site during construction activities.

6.0 OPERATION AND MAINTENANCE

No Operations and Maintenance activities will be required for remedial actions at the Dewatering Pit. The performance standard for this work will be achieved by removal of the residual solids.

7.0 REFERENCES

Bechtel. 1996. *Remedial Investigation Report for the Eastern Michaud Flats Superfund Site.* Bechtel Environmental, Inc. Prepared for FMC Corporation and the J.R. Simplot Company.

Ecology and Environment Inc., 1996. *Baseline Human Health Risk Assessment. Eastern Michaud Flats Superfund Site.* Prepared for EPA.

USEPA. 1998. *Record of Decision, Declaration Decision Summary and Responsiveness Summary for Eastern Michaud Flats Superfund Site.* Pocatello, Idaho, US EPA Region 10. June 1998.

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APPENDIX A

APPENDIX A

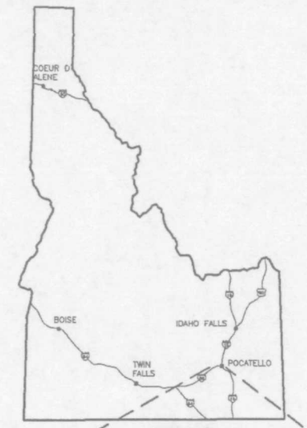
Construction Drawings

EASTERN MICHAUD FLATS SUPERFUND SITE

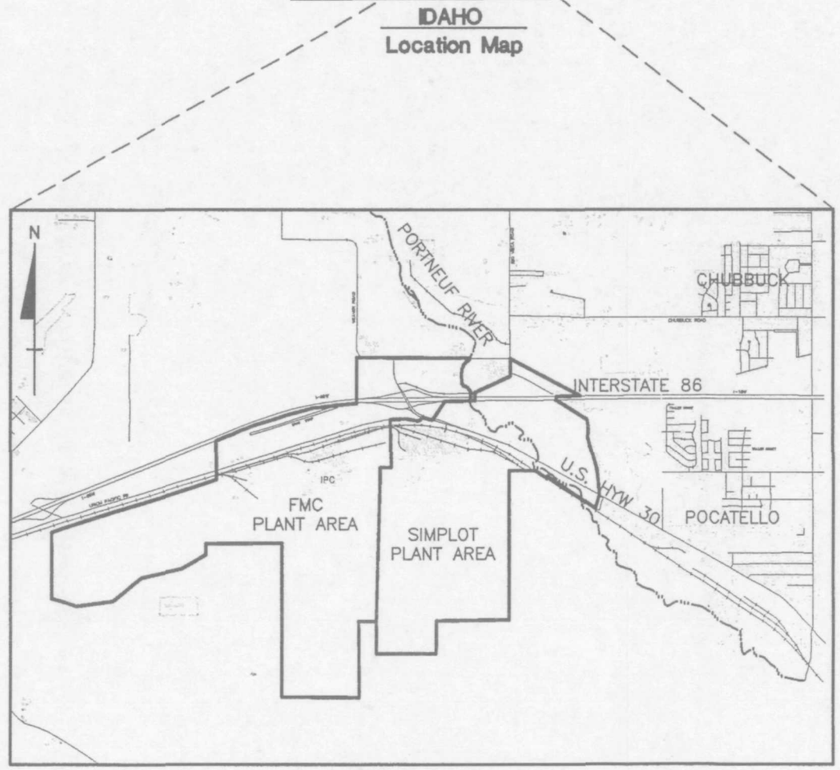
POCATELLO, IDAHO

SIMPLOT PLANT AREA
DEWATERING PIT SOLIDS REMOVAL PROJECT

SHEET TITLE	SHEET NO.
LOCATION & VICINITY MAPS & TITLE SHEET	0121C-101
DEWATERING PIT SITE PLAN AND HAUL ROUTE	0121C-102
DEWATERING PIT EXCAVATION PLAN	0121C-103
DEWATERING PIT REGRADING PLAN	0121C-104



IDAHO
Location Map



VICINITY MAP
SCALE
0.5 0 0.5 MILE

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REFERENCE

NO.	REVISIONS	BY	DATE
0	ISSUE FOR REVIEW	DLL	05/02

DESIGNED BY:	DLL
DRAWN BY:	SCG
CHECKED BY:	ACK
APPROVED BY:	DLL
CTB:	MFG-STD
VIEW NAME:	PLAN
ORIGINATION DATE:	05/21/02
PLOT SCALE:	1:1 OR 1:2
DATE:	MAY 2002

EASTERN MICHAUD FLATS
POCATELLO, IDAHO
SIMPLOT PLANT AREA
DEWATERING PIT REMEDIAL ACTION

LOCATION & VICINITY MAPS & TITLE SHEET

DRAWING NO. 0121C-101
REV.NO. 0
SHEET 1 OF 4

Plot time: 2:30 pm
Plot date: 6/4/02
SCG 0121C-101.dwg D:\MCS\010121-4\ 010121.4 34x22 1=40 5/24/02 11:30 am
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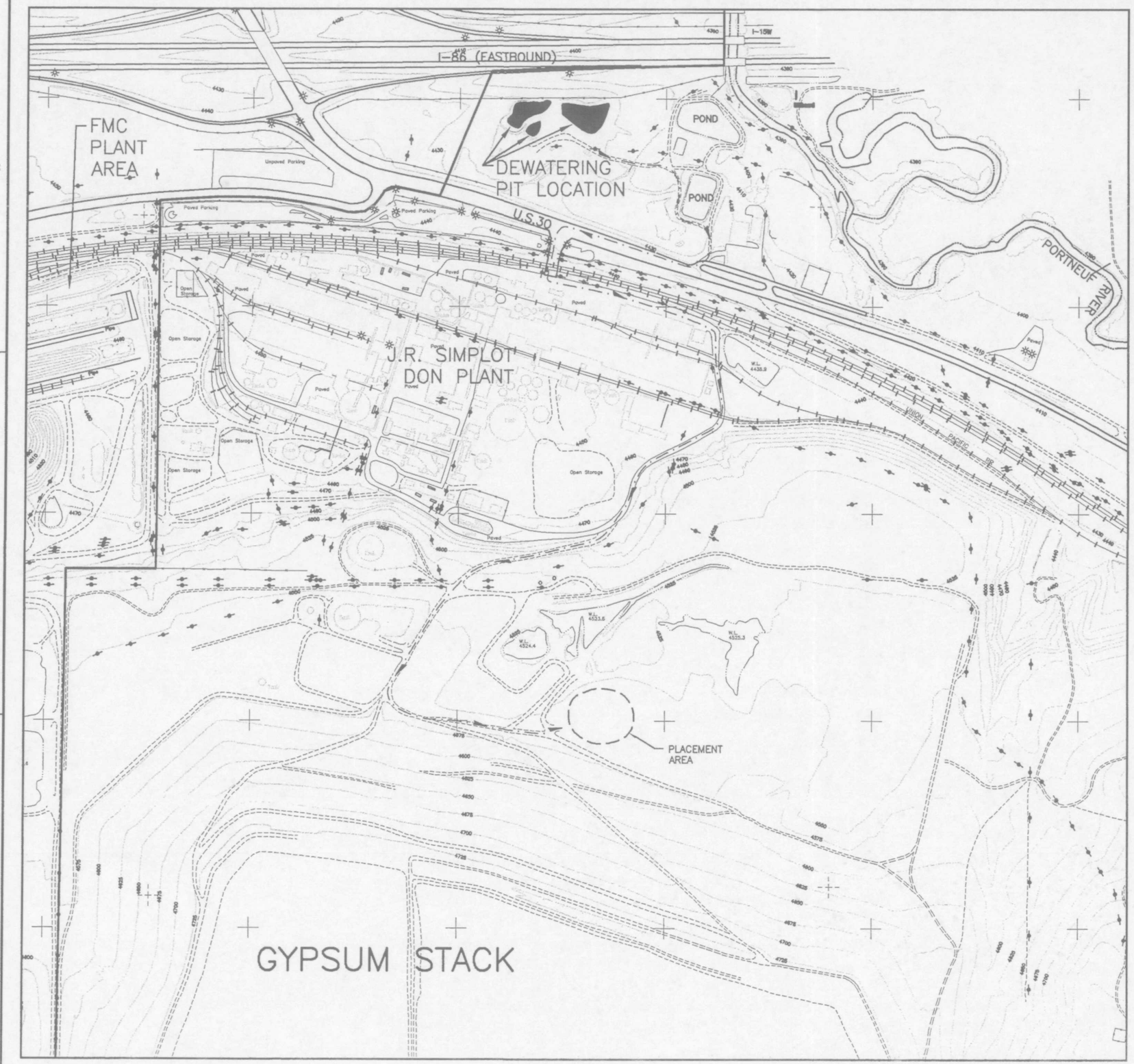
Images: [none]



LEGEND:

- DEWATERING PIT
- HAUL ROUTE TO GYPSUM STACK PLACEMENT AREA
- PLACEMENT AREA

NOTES:

1. CONTRACTOR MUST COMPLY WITH ALL SIMPLOT TRAFFIC AND SAFETY RULES AND REGULATIONS WHEN TRAVELING THROUGH THE DON PLANT.
2. ALL HAUL TRAFFIC MUST BE CONFINED TO DESIGNATED HAUL ROUTES.
3. EXACT PLACEMENT AREA OR DUMPING SITE WILL BE DESIGNATED BY SIMPLOT OPERATIONS PERSONNEL.
4. CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL AND/OR APPROPRIATE SIGNAGE, AS NECESSARY, AT ENTRANCE TO HIGHWAY 30.

N

SCALE
250 0 250 FEET

MFG
consulting scientists and engineers
4900 Pearl East Circle, Suite 300W,
Boulder, Colorado 80301
Phone (303) 447-1823
Fax (303) 447-1836

DISCLAIMER

THE INFORMATION PROVIDED ON THIS DRAWING WAS PRODUCED USING BOTH TECHNICAL INFORMATION AND KNOW HOW. ANY ADAPTATION OR MODIFICATION OF THE INFORMATION OR DRAWING SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO THE ENGINEER.

REFERENCE

- BECHTEL ENVIRONMENTAL, INC., DATE OF PHOTOGRAPHY: 21JUNE92 DATE OF MAPPING: AUGUST 92 MAPPING AND PHOTOGRAPHY BY WALKER AND ASSOCIATES, INC. SEATTLE, WASHINGTON. SEATTLE, WASHINGTON

NO.	REVISIONS	BY	DATE
0	ISSUE FOR REVIEW	DLL	05/02

DESIGNED BY:	DLL
DRAWN BY:	SCG
CHECKED BY:	ACK
APPROVED BY:	DLL
CTB:	MFG-STD
VIEW NAME:	PLAN
ORIGINATION DATE:	04/29/02
PLOT SCALE:	1:1 OR 1:2
DATE:	MAY 2001

EASTERN MICHAUD FLATS
POCATELLO, IDAHO
~~SIMPLOT PLANT AREA~~
DEWATERING PIT REMEDIAL ~~ACTION~~

DEWATERING PIT SITE PLAN AND HAUL ROUTE

DRAWING NO. 0121C-102
REV.NO. 0
SHEET 2 OF 4

SCG 0121C-102.dwg D:\MCS\0101121-4\ 0101121.4 34x22 1=1 6/4/02 9:42 am
Xrefs: [none]
Images: [none]
Plot time 9:43 am
Plot date: 6/4/02

LEGEND:

APPROXIMATE AREA OF PHOSPHATE ORE RESIDUALS

NOTES:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITY LOCATES PRIOR TO EXCAVATION.
2. REMOVE ALL VISUALLY IDENTIFIABLE ORE RESIDUALS FROM AREAS INDICATED.
3. COOPERATE WITH AND ASSIST ENGINEER OR OWNER'S REPRESENTATIVE IN THE COLLECTION OF SOIL SAMPLES FOLLOWING REMOVAL.
4. AVOID DISTURBANCE OF EXISTING VEGETATION TO EXTENT PRACTICAL.

N

SCALE
40 0 40 FEET

M F G
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NO.	REVISIONS	BY	DATE
0	ISSUE FOR REVIEW	DLL	05/02

DESIGNED BY:	DLL
DRAWN BY:	SCG
CHECKED BY:	ACK
APPROVED BY:	DLL
CTB:	MFG-STD
VIEW NAME:	PLAN
ORIGINATION DATE:	04/29/02
PLOT SCALE:	1:1 OR 1:2
DATE:	MAY 2002

EASTERN MICHAUD FLATS
POCATELLO, IDAHO
SIMPLOT PLANT AREA
DEWATERING PIT REMEDIAL ACTION

DEWATERING PIT EXCAVATION PLAN

DRAWING NO. 0121C-103
REV.NO. 0
SHEET 3 OF 4

Plot time: 8:53 am
Plot date: 7/25/02
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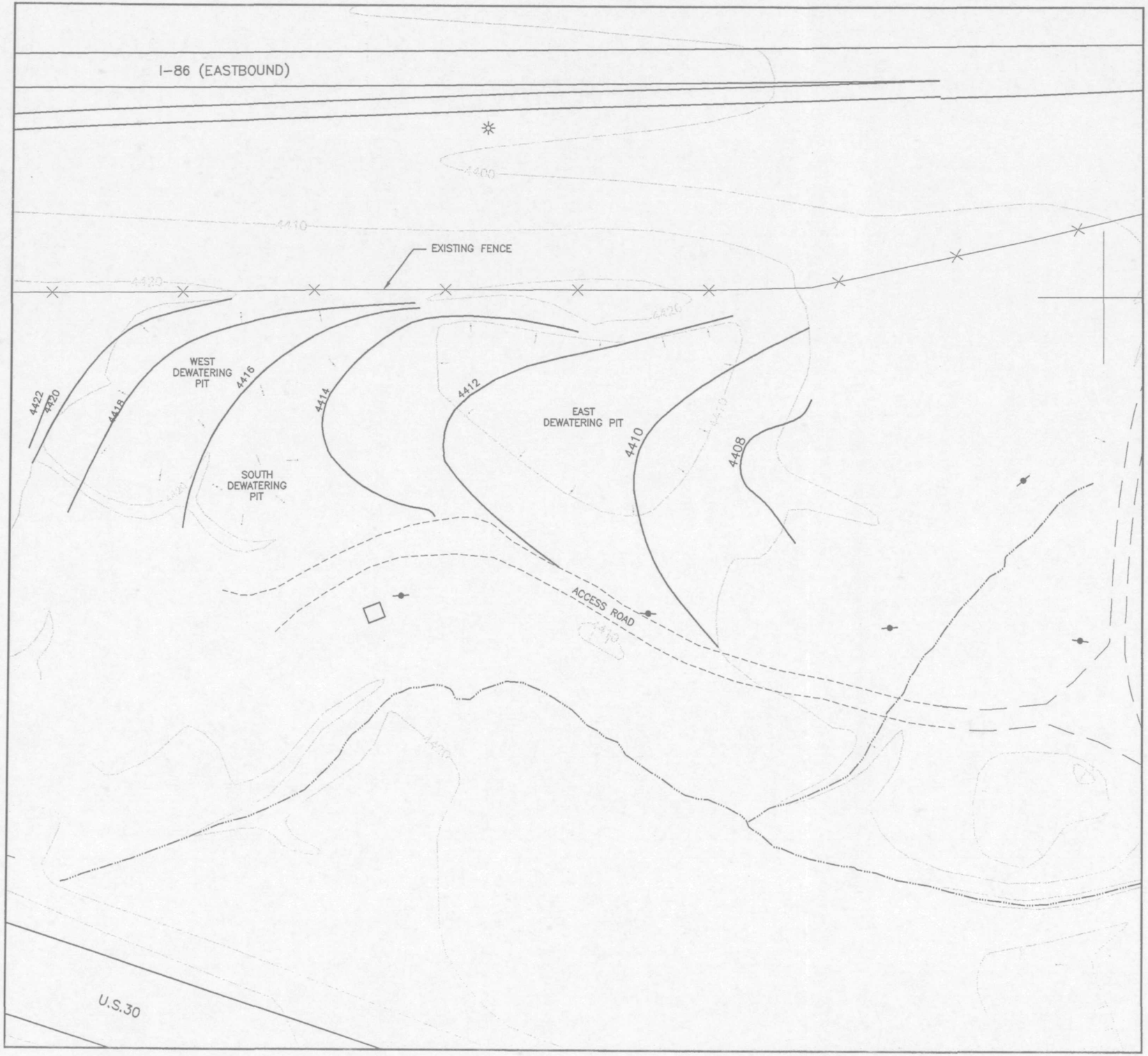

LEGEND:

- POWER POLE
- 4420 EXISTING INDEX AND INTERMEDIATE CONTOURS
- 4418 PROPOSED REGRADED CONTOURS

NOTES:

1. FOLLOWING REMOVAL AND SATISFACTORY RESULTS OF CONFIRMATION SAMPLING BACKFILL PITS USING SURROUNDING BERM MATERIAL.
2. BACKFILL AND REGRADE AREA TO PROMOTE POSITIVE DRAINAGE AND AVOID PONDING.
3. INSTALL SEDIMENT CONTROL IN THE FORM OF SILT FENCE AND/OR STRAW BALES TO MINIMIZE TRANSPORT OF SEDIMENT.

N

SCALE
40 0 40 FEET

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REFERENCE

NO.	REVISIONS	BY	DATE
0	ISSUE FOR REVIEW	DLL	05/02

DESIGNED BY:	DLL
DRAWN BY:	SCG
CHECKED BY:	ACK
APPROVED BY:	DLL
CTB:	MFG-STD
VIEW NAME:	PLAN
ORIGINATION DATE:	04/29/02
PLOT SCALE:	1:1 OR 1:2
DATE:	MAY 2002

EASTERN MICHAUD FLATS
POCATELLO, IDAHO
SIMPLOT PLANT AREA
DEWATERING PIT REMEDIAL ACTION

DEWATERING PIT REGRADING PLAN

DRAWING NO. 0121C-104
REV.NO. 0
SHEET 4 OF 4

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Xrefs: [none]
Images: [none]
Plot time: 3:05 pm
Plot date: 7/19/02

APPENDIX B

APPENDIX B

Contractor Statement of Work/Specifications

SIMPLOT PLANT AREA
DEWATERING PIT SOLIDS REMOVAL PROJECT
POCATELLO, IDAHO

STATEMENT OF WORK / PROJECT SPECIFICATIONS

A. Background Information

The Eastern Michaud Flats (EMF) Superfund Site Dewatering Pit Solids Removal Project consists of removal and disposal of residual solids from the Dewatering Pit located between Highway 30 and Interstate 86. The dewatering pit was briefly used by Simplot to contain excess phosphate ore from the start-up period for the ore slurry pipeline.

The Dewatering Pit consists of three bermed ponds. The total combined surface of these three ponds is approximately 41,750 square feet. One boring advanced in the eastern pit indicated the presence of approximately 2.5 feet of ore before native soil was reached. It is conservatively estimated that the three pits/ponds contain up to 6,800 cubic yards of residual solids.

Residual solids, visually distinct from the underlying native soil, are to be removed from the dewatering pits, hauled to, and placed on the Simplot Don Plant Gypsum Stack for disposal. Once excavation is complete, confirmation soil sampling will be conducted by Simplot to confirm that removal is complete. Following removal and confirmatory sampling the west and south pits will be regraded to match the existing topography. The east pit is to remain open to accommodate future construction in the area.

This project is being conducted by the J.R. Simplot Company, hereinafter referred to as the Owner, in accordance with a Remedial Action Work Plan prepared as directed under a Consent Decree between Simplot and the US Environmental Protection Agency.

B. Supervision

All work will be performed in the presence of an authorized representative of the Owner or designated Field Supervisor. The Field Supervisor will be the Owner's representative during construction to monitor the progress of construction and the quality of the work, and to record the data necessary to document the satisfactory completion of the project. The Field Supervisor will not be responsible for construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs required for the work.

The Contractor shall maintain a competent staff at all times to supervise and perform the work. The Contractor shall maintain on the project during its progress, a competent supervisor, satisfactory to the Owner.

C. Contractor Health & Safety

The Contractor acknowledges that the residual solids in the Dewatering Pit area may contain elevated concentrations of metals and inorganic constituents, including arsenic, beryllium, fluoride, phosphorous, cadmium, chromium, vanadium and zinc. Contractor shall prepare for and conduct all operations at the site in a manner to avoid risk of bodily harm to persons or damage to property and in full compliance with OSHA, the health and safety provisions of the contract documents, site-specific health and safety requirements of the Simplot Don Plant, and any and all other applicable authorities. Contractor shall prepare and submit a site specific Health and Safety Plan (HASP) that includes a construction safety program. The HASP shall be prepared in accordance with provisions in 29 CFR 1910.120, Simplot Don Plant requirements and other federal, state and local regulations. All contractor personnel on-site must comply with the training requirements of OSHA contained in 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER).

D. Contractor Scope of Work

Upon receipt of notice to proceed by owner, Contractor will mobilize personnel, equipment, and materials to the site. Contractor shall use an adequate number of skilled workers experienced in the type of work to be performed. Prior to the start of removal, contractor shall be solely responsible for locating utilities in and around the work area. Care will be taken to identify all possible underground and overhead hazards. Contractor shall provide portable sanitation facilities for on-site personnel at the work area. Contractor shall keep the site free from any unnecessary accumulation of waste materials and rubbish and shall maintain the site in a safe and tidy condition at all times. Work activities are to be avoided at times when excavation and transportation activities may be hindered by frozen or excessively wet ground.

Removal activities will begin by modifying the berm on the south side of each of the three pits to create access ramps into each excavation area. Excavation is to proceed both vertically and laterally until there is a visible change in material type. The residual solids are gray in color, while the native soil is a light brown. All visible residual solids will be removed down to native soil.

Material is to be loaded into trucks, and transported to the gypsum stack. Trucks are to be routed and spotted for loading so as to minimize the tracking of residual solids from the dewatering pits. Load counts for each truck are to be submitted daily at the end of the day, or prior to the start of hauling the following day. Trucks are to be loaded with sufficient freeboard to prevent spilling of material during transportation. If material dries adequately to produce dust, the material shall either be wetted or covered prior to transportation to the gypsum stack. Any material that is spilled during loading or hauling is to be collected and managed with the remainder of the residual solids.

Excavated material is to be transported via Highway 30 to the lower gypsum stack at the Simplot Don Plant. All haul traffic must be confined to designated haul routes, as identified on the drawings, or as directed by the Field Supervisor. The contractor shall conduct its operations so as not to interfere with the normal flow of traffic on local roads near the site and must comply with all Simplot Don Plant traffic and safety rules and regulations when traveling through the plant. During hauling activities, contractor is to provide traffic control and/or appropriate signage at the entrance onto Highway 30, as necessary or required by state or local regulations. The solids will be placed on the southwestern corner of the lower gypsum stack at the direction of the Field Supervisor or Owner's representative. Contractor shall spread dumped material as directed by Field Supervisor or Owner's representative. Placement activities at the gypsum stack placement area shall be performed in a manner to avoid interference with stack building and maintenance operations.

The Contractor is required to maintain a water truck on-site for dust control. Dust control activities are to be performed to minimize dust emissions from the site. Apply water, as necessary, to the excavation areas, perimeter work areas, and haul roads to minimize and control dust emissions. Dust control is to be performed so as not to saturate the soils. If necessary to prevent the tracking of mud onto the highway, the Contractor shall place a gravel pad at the entrance to Highway 30.

Contractor shall take all necessary precautions to limit disturbance to natural drainageways and existing vegetation in the vicinity of the work, and shall install temporary culverts, as required, to maintain drainageways during construction. Contractor shall control erosion along access roads and provide sedimentation control structures downstream of all work areas. Storm water run-on is to be diverted away from the work area and storm water run-off from disturbed work areas shall be controlled, as necessary, through the use of straw bales and/or silt fence to control erosion and sediment transport off-site.

Once the removal is complete the contractor is to assist the Field Supervisor or Owner's Representative with confirmation soil sampling. Confirmation soil samples will be collected from the zero to six inch depth interval in the underlying soils. Excavation of an additional 6-inches of soil and additional sampling will be required if the results of the confirmation sampling are not below the established confirmation value. Following the receipt of acceptable confirmation sampling results the pits will be backfilled using the berm material surrounding the pits to establish a final grade that matches the surrounding terrain as shown on the drawings. Place material in lifts not to exceed 12 inches, and nominally compact with the passage of equipment. Regrade area to promote positive drainage.

Following completion of the work, contractor shall thoroughly clean all equipment that has come into contact with the residual solids and remove from the site all equipment, materials and temporary facilities not incorporated into the work. Contractor shall leave all areas of the site in a clean, stable condition.

APPENDIX C

APPENDIX C

Standard Operating Procedures

MFG, Inc.

STANDARD OPERATING PROCEDURE No. 2

SAMPLE CUSTODY, PACKAGING AND SHIPMENT

1.0 SCOPE AND APPLICABILITY

This Standard Operating Procedure (SOP) describes the protocol to be followed for sample custody, packaging and shipment. The procedures presented herein are intended to be general in nature. If warranted, appropriate revisions may be made when approved in writing by the MFG Project Manager.

This SOP applies to any liquid or solid sample that is being transported by the sampler, a courier or an overnight delivery service.

2.0 PROCEDURES

The objectives of this packaging and shipping SOP are: to minimize the potential for sample breakage, leakage or cross contamination; to provide for preservation at the proper temperature; and to provide a clear record of sample custody from collection to analysis.

2.1 Packaging Materials

The following is a list of materials that will be needed to facilitate proper sample packaging:

- X Chain-of-Custody Record forms (see Figure SOP-2-1);
- X Coolers (insulated ice chests) or other shipping containers as appropriate to sample type;
- X Transparent packaging tape;
- X Zip-lock type bags (note: this is used as a generic bag type, not a specific brand name);

X Protective wrapping and packaging material;

X Contained ice (packaged and sealed to prevent leakage when melted) or "Blue Ice"; and

X Chain-of-Custody seals.

2.2 Sample Custody from Field Collection to Laboratory

After samples have been collected, they will be maintained under chain-of-custody procedures. These procedures are used to document the transfer of custody of the samples from the field to the designated analytical laboratory. The same chain-of-custody procedures will be used for the transfer of samples from one laboratory to another, if required.

The field sampling personnel will complete a Chain-of-Custody Record and Request for Analysis form (CC/RA form, Figure SOP-2-1) for each separate container of samples to be shipped or delivered to the laboratory for chemical or physical (geotechnical) analysis. Information contained on the triplicate, carbonless form will include:

1. Project identification;
2. Date and time of sampling;
3. Sample identification;
4. Sample matrix type;
5. Sample preservation method(s);
6. Number and types of sample containers;
7. Sample hazards (if any);
8. Requested analysis(es);
9. Requested sample turnaround time;
10. Method of shipment;
11. Carrier/waybill number (if any);

12. Signature of sampling personnel;

13. Name of MFG Project Manager;

14. Signature, name and company of the person relinquishing and the person receiving the samples when custody is being transferred;

15. Date and time of sample custody transfer; and

16. Condition of samples upon receipt by laboratory.

The sample collector will cross out any blank space on the CC/RA form below the last sample number listed on the part of the form where samples are listed. The samples will be carefully packaged into shipping containers/ice chests.

The sampling personnel whose signature appears on the CC/RA form is responsible for the custody of a sample from time of sample collection until the custody of the sample is transferred to a designated laboratory, a courier, or to another MFG employee for the purpose of transporting a sample to the designated laboratory. A sample is considered to be in their custody when the custodian: (1) has direct possession of it; (2) has plain view of it; or (3) has securely locked it in a restricted access area.

Custody is transferred when both parties to the transfer complete the portion of the CC/RA form under "Relinquished by" and "Received by." Signatures, printed names, company names, and date and time of custody transfer are required. Upon transfer of custody, the MFG sampling personnel who relinquished the samples will retain the third sheet (pink copy) of the CC/RA form. When the samples are shipped by a common carrier, a Bill of Lading supplied by the carrier will be used to document the sample custody, and its identification number will be entered on the CC/RA form. Receipts of Bills of Lading will be retained as part of the permanent documentation in the MFG project file.

2.3 Sample Custody Within Laboratory

The designated laboratory will assume sample custody upon receipt of the samples and CC/RA form. Sample custody within the analytical laboratory will be the responsibility of designated laboratory personnel. The laboratory will document the transfer of sample custody and receipt by the laboratory by signing the correct portion of the CC/RA form. Upon receipt, the laboratory sample custodian will note the condition of the samples, by checking the following items:

1. Agreement of the number, identification and description of samples received by comparison with the information on the CC/RA form; and
2. Condition of samples (no air bubbles in VOA containers; any bottle breakage; leakage, cooler temperature, etc.).

If any problems are discovered, the laboratory sample custodian will note this information on the "Laboratory Comments/Condition of Samples" section of the CC/RA form, and will notify the MFG sampling personnel or Project Manager immediately. The MFG Project Manager will decide on the final disposition of the problem samples.

The laboratory will retain the second sheet (yellow copy) of the CC/RA form and return the first sheet (white original) to MFG with the final laboratory report of analytical results. The original of the CC/RA form will be retained as part of the permanent documentation in the MFG project file.

A record of the history of the sample within the laboratory containing sample status and storage location information will be maintained in a logbook, or a computer sample tracking system, at the laboratory. The following information will be recorded for every sample access event:

1. Sample identification;
2. Place of storage;
3. Date(s) and time(s) of sample removal and return to storage;
4. Accessor's name and title;
5. Reason for access; and

6. Comments/observations (if any).

The laboratory will provide MFG with a copy of the logbook or computer file information pertaining to a sample upon request.

2.4 Sample Custody During Inter-Laboratory Transfer

If samples must be transferred from one laboratory to another, the same sample custody procedures discussed above will be followed. The designated laboratory person (sample custodian) will complete a CC/RA Record (MFG form or similar) and sign as the originator. The laboratory relinquishing the sample custody will retain a copy of the completed form. The laboratory receiving sample custody will sign the form, indicating transfer of custody, retain a copy, and return the original record to MFG with the final laboratory report of analytical results. The CC/RA Record will be retained as part of the permanent documentation in the MFG project file.

2.5 Packaging and Shipping Procedure

Be sure that all sample containers are properly labeled and all samples have been logged on the Chain-of-Custody Request for Analysis form (CC/RA, SOP-2-1) in accordance with the procedures explained above and in the MFG SOPs entitled WATER QUALITY SAMPLING and SOIL/SEDIMENT SAMPLING FOR CHEMICAL ANALYSIS.

All samples should be packed in the cooler so as to minimize the possibility of breakage, cross-contamination and leakage. Before placing the sample containers into the cooler, be sure to check all sample bottle caps and tighten if necessary. Bottles made of breakable material (e.g., glass) should also be wrapped in protective material (e.g., bubble wrap, plastic gridding, or foam) prior to placement in the cooler. Place each bottle or soil liner into two zip-lock bags to protect from cross-contamination and to keep the sample labels dry. Place the sample containers upright in the cooler. Avoid stacking glass sample bottles directly on top of each other.

If required by the method, samples should be preserved to 4°C prior to the analysis. Water ice or "blue ice" will be used to keep the sample temperatures at 4°C. The ice will be placed in two zip-lock bags if the samples are to be transported by someone other than the MFG sampler (e.g., a courier or overnight delivery service). Place the zip-lock bags of ice in between and on top of the sample containers so as to maximize the contact between the containers and the bagged ice. If the MFG sampler is transporting the samples to the laboratory shortly after sample collection, the water ice may be poured over and between the sample bottles in the cooler.

If there is any remaining space at the top of the cooler, packing material (e.g., styrofoam pellets or bubble wrap) should be placed to fill the balance of the cooler. After filling the cooler, close the top and shake the cooler to verify that the contents are secure. Add additional packaging material if necessary.

When transport to the laboratory by the MFG sampler is not feasible, sample shipment should occur via courier or overnight express shipping service that guarantees shipment tracking and next morning delivery (e.g., Federal Express Priority Overnight). In this case, place the chain-of-custody records in a zip-lock bag and place the bag on top of the contents within the cooler. Tape the cooler shut with packaging tape. Packaging tape should completely encircle the cooler, and a chain-of-custody seal should be signed and placed across the packaging tape, and across at least one of the opening points of the container.

Retain copies of all shipment records provided by the courier or overnight delivery service and maintain in the project's file.

2.6 Documentation and Records Management

Daily Field Records or a field notebook with field notes will be kept describing the packaging procedures and the method of shipments. Copies of all shipping records and chain-of-custody records will be retained in the project files.

3.0 QUALITY ASSURANCE

The Project Manager or designated QA reviewer will check and verify that documentation has been completed and filed per this procedure.

MFG, Inc.

STANDARD OPERATING PROCEDURE No. 16

EQUIPMENT DECONTAMINATION

1.0 SCOPE AND APPLICABILITY

This Standard Operating Procedure (SOP) describes the methods to be used for the decontamination of all reusable field equipment which could become contaminated during use or during sampling. The equipment may include split spoons, bailers, trowels, shovels, hand augers or any other type of equipment used during field activities.

Decontamination is performed as a quality assurance measure and a safety precaution. It prevents cross contamination between samples and also helps to maintain a clean working environment.

Decontamination is achieved mainly by rinsing with liquids which may include: soap and/or detergent solutions, tap water, distilled weak acid solution, and/or methanol or other solvent. Equipment may be allowed to air dry after being cleaned or may be wiped dry with chemical-free towels or paper towels if immediate re-use is necessary.

At most project sites, decontamination of equipment that is re-used between sampling locations will be accomplished between each sample collection point. Waste produced by decontamination procedures, including waste liquids, solids, rags, gloves, etc., should be collected and disposed of properly, based upon the nature of contamination. Specific details for the handling of decontamination wastes are addressed in the MFG SOP entitled STORAGE AND DISPOSAL OF SOIL, DRILLING FLUIDS AND WATER GENERATED DURING FIELD WORK or may be specified by a project plan.

2.0 PROCEDURES

2.1 Responsibilities

It is the responsibility of the field sampling coordinator to ensure that proper decontamination procedures are followed and that all waste materials produced by decontamination are properly managed. It is the responsibility of the project safety officer to draft and enforce safety measures which provide the best protection for all persons involved directly with sampling and/or decontamination.

It is the responsibility of any subcontractors (i.e., drilling contractors) to follow the proper, designated decontamination procedures that are stated in their contracts and outlined in the Site-Specific Health and Safety Plan. It is the responsibility of all personnel involved with sample collection or decontamination to maintain a clean working environment and ensure that any contaminants are not negligently introduced to the environment.

2.2 Supporting Materials

1. Cleaning liquids: soap and/or detergent solutions (Alconox, etc.), tap water, distilled water, methanol, weak nitric acid solution, etc.
2. Personal protective safety gear as defined in the Site-Specific Health and Safety Plan.
3. Chemical-free towels or paper towels.
4. Disposable, nitrile gloves.
5. Waste storage containers: drums, boxes, plastic bags, etc.
6. Cleaning containers: plastic and/or stainless steel pans and buckets.
7. Cleaning brushes.
8. Aluminum foil.

2.3 Methods

The extent of known contamination will determine the degree of decontamination required. If the extent of contamination cannot be readily determined, cleaning should be done according to the assumption that the equipment is highly contaminated. Decontamination procedures should account for the types of contaminants known or suspected to be present. In general, high levels of organic contaminants should include an organic solvent wash step, and high levels of metals contamination should include a weak acid rinse step.

The procedures listed below constitute the full field decontamination procedure. If different or more elaborate procedures are required for a specific project, they may be specified in sampling and analysis or work plan. Such variations in decontamination protocols may include all, part or an expanded scope of the decontamination procedure stated herein.

1. Remove gross contamination from the equipment by dry brushing, and rinse with tap water.
2. Wash with soap or laboratory-grade detergent solution.
3. Rinse with tap water.
4. Rinse with methanol (optional, for equipment potentially contaminated by organic compounds).
5. Rinse with acid solution (optional, for equipment potentially contaminated by metals).
6. Rinse with distilled or deionized water.
7. Repeat entire procedure or any parts of the procedure as necessary.
8. Air dry.

Decontaminated equipment should be stored in sealable containers, such as Ziplock-type plastic bags or cases or boxes with lids.

2.4 DOCUMENTATION

Field notes will be kept describing the decontamination procedures followed. The field notes will be recorded according to procedures described in the MFG SOP entitled FIELD DOCUMENTATION.

3.0 QUALITY CONTROL

To assess the adequacy of decontamination procedures, field rinsate blanks may be collected. The specific number of rinsate blanks will be defined in a sampling and analysis or work plan or by the MFG project manager. In general, at least one field rinsate blank should be collected per sampling event or per day.

Rinsate blanks with elevated or detected contaminants will be evaluated by the Project Manager, who will relay the results to the site workers. Such results may be indicative of inadequate decontamination procedures that require corrective actions (e.g., retraining).

OFFICE LOCATIONS

CALIFORNIA
Arcata
Irvine
San Francisco

COLORADO
Boulder

FLORIDA
Jacksonville

IDAHO
Osburn

MONTANA
Missoula

NEW JERSEY
Edison

PENNSYLVANIA
Pittsburgh

TEXAS
Austin
Houston
Port Lavaca
Texarkana

WASHINGTON
Seattle

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